AMENDMENTS TO THE CLAIMS

Please amend Claims 1, 5-7, 11 and 17 as follows.

1. (Currently amended) An apparatus for measuring a three-dimensional shape of an object, the apparatus comprising:

a pattern film containing a plurality of striped patterns, wherein the striped patterns are formed in at least one of longitudinal and latitudinal directions;

a projecting section configured to project a plurality of striped patterns onto an object to be measured;

a transporting section configured to move the pattern film along the at least one of the longitudinal and latitudinal directions such that the projecting section sequentially projects the pattern film onto the object;

a photographing section configured to photograph the object with at least two of the plurality of striped patterns being simultaneously projected thereon ~~at a predetermined interval of time~~; and

an operational unit configured to estimate images of the object from the photographed images so as to obtain three-dimensional shape information for the object.

2. (Original) The apparatus of Claim 1, wherein the operational unit is configured to determine borders between each of the plurality of striped patterns included in the photographed image so as to classify the image into pieces, to select image pieces having identical striped patterns from the classified image pieces, and to combine the selected image pieces so as to estimate an image that would be generated by projecting a single striped pattern onto the object.

3. (Original) The apparatus of Claim 1, wherein the photographing section is positioned at the top or bottom of the projecting section, and the optical axes of the projecting section and the photographing section are positioned perpendicular to a plane where the pattern film is positioned.

4. (Original) The apparatus of Claim 3, wherein a straight line connecting the centers of the projecting section and the photographing section is positioned parallel to a plane formed by the pattern film.

5. (Currently amended) The apparatus of Claim 1, wherein the width of ~~at least one of the plurality of~~two adjacent striped patterns is less than an entire projected area of the object,

and greater than the distance of the pattern film to be transported by the transporting section, the distance being defined as the value resulting from multiplication of a pattern film transporting speed of the transporting section and continuous photographing time interval of the photographing section.

6. (Currently amended) The apparatus of Claim 5, wherein the width of ~~at least one of the plurality of~~two adjacent striped patterns is less than an entire projected area of the object, but greater than a resultant value obtained by adding a transportation distance of the pattern film and the value resulting from multiplication of a shutter speed of the photographing section and a transporting speed of the pattern film.

7. (Currently amended) The apparatus of Claim 1, wherein the width of ~~at least one of the plurality of~~two adjacent striped patterns is less than an entire projected area of the object, but greater than a resultant value obtained by adding a transportation distance of the pattern film and the value resulting from multiplication of a shutter speed of the photographing section and a transporting speed of the pattern film.

8. (Original) The apparatus of Claim 1, further comprising a control unit configured to control the projecting section, the transporting section and the photographing section.

9. (Original) The apparatus of Claim 1, wherein the projecting section includes a light source and a projecting lens arranged in front of and in the back of the pattern film, respectively, and further comprising a first cylinder lens which is arranged between the pattern film and the projecting lens so as to enlarge the image projected from the pattern film.

10. (Original) The apparatus of Claim 9, further comprising a second cylinder lens arranged symmetrically to the first cylinder lens with respect to the pattern film and being arranged between the light source and the pattern film.

11. (Currently amended) A method of measuring a three-dimensional shape of an object, the method comprising:

transporting a pattern film containing a plurality of striped patterns, formed in at least one of longitudinal and latitudinal directions, along the at least one direction;

projecting the pattern film onto an object;

photographing the object, on which at least two of the plurality of striped patterns have been simultaneously projected~~, at a predetermined time interval~~; and

estimating images of the object, which would be obtained by projecting a plurality of single striped patterns onto the object, from the photographed images so as to obtain three-dimensional shape information.

12. (Original) The method of Claim 11, wherein the transportation distance of the pattern film at one photographing shot is less than the width of one of the plurality of striped patterns, and wherein the transportation speed of the pattern film is less than the result obtained by having the width of one of the plurality of striped patterns divided by a value, the value being obtained by adding a continuous photographing time interval and a shutter speed of the photographing section.

13. (Original) The method of Claim 11, wherein the estimating comprises:

determining borders between each of the plurality of striped patterns of the photographed images so as to classify each image into pieces;

selecting image pieces having identical striped patterns from the classified image pieces; and

combining the selected image pieces to estimate an image that would be generated by projecting a single striped pattern onto the object.

14. (Original) The method of Claim 13, wherein the determining comprises extracting borders between each of the plurality of striped patterns by using a formula as follows:

$$B(i,j+1)=B(i,j)+D\times Sp/Sc$$

$$B(i+1,j)=B(i,j)+(\Delta t\times v)\times Sp/Sc$$

where,

B(i,j+1) designates a position of a j+1th border in the ith image,

B(i,j) a position of a jth border in the ith image,

D the width of each of the plurality of striped patterns in the pattern film,

Sp a projecting magnification,

Sc a photographing magnification,

B(i+1, j) designates a position of a jth border in the i+1th image,

Δt a continuous photographing time interval and

v a pattern film transporting speed.

15. (Original) The method of Claim 13, wherein the determining comprises extracting borders between each of the plurality of striped patterns by comparing brightness and color data

of one area with those of the following area while being transported perpendicular to the striped pattern of a reference image selected from the images sequentially photographed at a predetermined time interval.

16. (Original) The method of Claim 13, wherein the combining comprises selecting and combining areas that are located on center portions of respective image pieces, with the respective image pieces maintaining the same coordinate system, so as to eliminate a motion blurring phenomenon .

17. (Currently amended) An apparatus for measuring a three-dimensional shape of an object, the apparatus comprising:

means for transporting a pattern film containing a plurality of striped patterns, formed in at least one of longitudinal and latitudinal directions, along the at least one direction;

means for projecting the pattern film onto an object;

means for photographing the object, on which at least two of the plurality of striped patterns have been simultaneously projected~~, at a predetermined time interval~~; and

means for estimating images of the object, which would be obtained by projecting a single striped pattern onto the object, from the photographed images so as to obtain three-dimensional shape information.